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INTEGRATED CORRIDOR MANAGEMENT – DES MOINES METRO AREA

ICM IMPLEMENTATION PLAN

OVERDIMENSIONAL TRUCK PERMITTING

10/24/19

v.2.0

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Introduction

PROJECT OVERVIEW

The Overdimensional Truck Permitting project focuses on limiting overdimensional vehicle trips on Interstate routes during peak hours as part of the Event Management strategy functional area identified within the Des Moines Metropolitan Area Integrated Corridor Management (ICM) Program. This pilot project will serve to highlight the benefits of limiting overdimensional vehicles during peak hours relative to corridor operations and identify challenges/impacts to carrier operations.

DOCUMENT SCOPE

This Implementation Plan document details the process for limiting overdimensional permits during peak hours along key freeway corridors. The Iowa DOT Office of Vehicle and Motor Carrier Services currently restricts overdimensional vehicles from weekday travel on I-235 through the Des Moines metropolitan area from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. As such, this pilot project will focus on the addition of I-35/80 to the existing permit restrictions.

It is anticipated that any new restrictions will be implemented on a temporary basis until the full impacts are measured. The Implementation Plan will serve as a guide for the temporary pilot and possible permanent adoption into the permitting process.

Process and Approach

As part of the Event Management strategy functional area identified within the Des Moines ICM Program, general background information and guidance on event management can be found in the Program-Level Concept of Operations (June 24, 2019) document. Specific to this strategy, significant outreach and coordination with the freight community will be necessary and an Outreach Plan should be developed to support the pilot project efforts.

This pilot project will require justification and operational data to support the restriction of overdimensional vehicles in the peak hour prior to any meeting with industry partners. Data related to freeway traffic operations and overdimensional permits was gathered from available resources throughout Iowa DOT. While every effort was made to highlight operational challenges associated with large freight moving through the region during the peak periods, much of the detail needed is not currently tracked and not available per existing methods. **Figure 1** highlights the data that was collected. As shown, I-35/80 experiences significantly higher crash rates involving freight than I-235, both compared to the total volume and compared to freight volumes. However, the crash data is related to all freight types and it is not known whether overdimensional vehicles were involved.

Figure 1 – Overdimensional Vehicle Data

	I-235	I-35/80
Roadway Characteristics		
Typical Number of Through Lanes	3	3
Length (mi) between Mixmasters	13.7	14.2
Traffic Characteristics		
Daily Traffic Volume (veh/day)	139,000	101,100
Freight Daily Volume (trucks/day)	6,330	15,610
Peak Hour Volume (veh/hr)		
Permit Activity		
Average Annual Overdimensional Permits (2017-2018)[1]	951	31,806
Average Number Overdimensional Permits during Peak Hour	unk	unk
Traffic Safety (2014-2017)		
Total Crashes involving Freight	86	326
Total Crashes involving Freight, Peak Hour	27	112
Total Crashes involving Overdimensional Freight	unk	unk
Total Fatalities/Serious Injuries involving Freight	0	4
Crashes/100 Million-Vehicle-Miles-Traveled	3.09	15.59
Crashes/100 Million-Freight-Miles-Traveled	67.92	100.95

[1] Overdimensional permits includes only individual permits for vehicles >8'6" wide, >13'6" high, >75' long, or >80,000 lbs

Prior to adding I-35/80 to the permit restrictions and prior to industry outreach, additional data is needed to justify the need. It is recommended that the following data requirements be initiated as part of this pilot project and tracked for a period of 6 months to establish a comprehensive baseline condition:

- Number of Overdimensional Vehicle permits through Des Moines metropolitan area: The Office of Vehicle and Motor Carrier Services currently tracks the routes used by Single Trip and MultiTrip Permits only. However, carriers can apply for Annual Permits which allow use of the entire system without reporting the routing to Iowa DOT on vehicles up to 13'6" in width and 120' in length. A method for tracking all overdimensional use on I-35/80 and I-235 through Des Moines will help establish a baseline demand. Changes to the permitting form and/or permitting process may result in more detailed data but also increases the number of permits and workload for permit staff statewide. To limit the focus on the Des Moines area, it is recommended that periodic observations be made on I-35/80 at key locations to identify the relative magnitude of overdimensional vehicles. Observations during 6:00 AM and 8:00 PM on weekdays, either in the field or using available interstate cameras, should be performed a minimum of 10 days to identify a reasonable range. To obtain a larger data set, observational data can be correlated to available traffic detector data to

estimate a correlation. In addition, observational data can be adjusted to account for monthly and seasonal variations using available statewide permit data.

- Time of Travel for Overdimensional Vehicle permits through Des Moines metropolitan area: The Office of Vehicle and Motor Carrier Services currently tracks permits based on their physical routing but not temporal routing. While Annual permits are valid at any time within a 12 month window, Single Trip and MultiTrip permits do have a limit for use – 5 days and 60 days, respectively. None of the permit holders are required to report what time-of-day or even what day-of-the-week they plan on using the permit. Establishing a method for tracking time-of-day permit travel using the permit process would rely on self-reporting by carriers and would increase permit workload statewide. To focus on I-35/80, field observations during the peak periods, similar to the methods described above, can help establish a baseline volume of overdimensional vehicles. This data will help quantify the influence on peak-hour traffic operations and the potential impact to businesses if peak hour restrictions are considered.
- Crashes Involving Overdimensional Vehicles: The Iowa State crash form requires the collection of crash data including information on vehicle type. While the form includes various classes of trucks, none of the vehicle codes include whether that class of vehicle is overdimensional or whether the operator has a valid permit. The Office of Vehicle and Motor Carrier Services does not get notified if one of their permitholders is involved in a crash. While Motor Vehicle Enforcement does get notified if an overdimensional vehicle is involved in a crash, it is typically limited to certain conditions such as serious injury crashes, bridge collisions, and/or lane blockages. To quantify existing safety concerns, it is recommended that all crashes involving identifiable overdimensional vehicles be tracked by MVE regardless of severity. This will require a simple standalone database or tracking method, officer training, and coordination with Iowa State Patrol and Des Moines Police Department.

If implemented, peak hour restrictions on both the I-235 and I-35/80 may require additional vehicle staging outside the Des Moines Metropolitan Area to accommodate temporary vehicle parking that may not be required today. While this is not specific to this project, Iowa DOT will require identification and/or development of staging areas that can accommodate the size and volume of anticipated overdimensional vehicles. Once the number of impacted vehicles during a peak hour is known, the following potential locations should be evaluated:

- North of Des Moines: Southbound I-35 Elkhart Rest Area
- South of Des Moines: Northbound I-35 Parking @ MP 53
- East of Des Moines: Westbound I-80 Mitchellville Rest Area and/or Weight Station
- West of Des Moines: Eastbound I-80 Adel Weight Station

Timeframe

The timeframe for this Implementation Plan – gathering data to support the addition of I-35/80 to the existing peak hour overdimensional permit restrictions – will require a minimum of 6 months to obtain reasonable data on crashes which may be infrequent.

Subsequent to this effort, an education/outreach effort with freight industry stakeholders will require several months of effort to obtain feedback and identify concerns. In total, it is anticipated that the Implementation Plan will require a total of 12 months from data collection, justification, outreach, to finalizing permit process

changes. Use of outside resources (consultant) will require administrative time for contracting purposes but could be accelerated with the use of existing on-call contracts.

Additional time may be necessary if staging areas located outside Des Moines Metropolitan Area are required. Preliminary locations have been identified but any changes to those sites for increased vehicle parking will require engineering design and construction services. The scope of such an effort will not be known until after the outreach effort.

Audience

The intent of this document is to provide guidance relative to overdimensional vehicle permitting on freeways in Des Moines Metropolitan Area. As such, the audience is limited to the Office of Vehicle and Motor Carrier Services, Motor Vehicle Enforcement, Office of Operations, commercial vehicle carriers, and the future Technical Committee for the Des Moines Metropolitan Area ICM Program.

Overdimensional Truck Permitting

Description	Currently overdimensional trucks are prohibited on I-235 through Des Moines during peak hours. This project aims to add I-35/80 to the current peak hour restrictions for overdimensional truck permits through the Des Moines metropolitan area. Prior to implementation or industry outreach, additional data is required related to the number of overdimensional permits in the peak hours and the number of those involved in crashes.			
Lead Agency	• Iowa DOT Motor Vehicle Enforcement			
Supporting Agency	• Iowa DOT Office of Vehicle and Motor Carrier Services			
Location	• I-35/80 between the two Mixmaster interchanges with I-235			
Technology & Infrastructure Elements	• There are no new technology elements proposed. • Potential staging areas may be required outside the Des Moines metropolitan area resulting in new infrastructure. Not included at this time.			
Operational Responsibilities	• Operational responsibilities will remain the same as existing – Iowa DOT Office of Vehicle and Motor Carrier Services will issue and manage overdimensional permits; Iowa DOT Motor Vehicle Enforcement will monitor and enforce permits.			
Funding Needs	• Data collection is anticipated to be performed using agency staff. It is estimated that 500 hours of staff time will be needed to observe and track overdimensional trucks within the peak hours and develop a method of recording crash data specific to overdimensional trucks.			
ROM Cost Estimate	**Planning & Design**	**Implementation**	**O&M (annual)**	**Total (10 Year Cost)**
	500 hours	**$0**	**$0**	**$0**
Funding Opportunities	•			
Project Dependencies	•			
Required Agreements	•			
Other/Notes				